

**A new species of the gorgonacean genus *Narella*
(Anthozoa: Octocorallia) from
Hawaiian waters**

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Abstract.—A new species of *Narella* collected in Hawaiian waters by the U.S. Bureau of Fisheries steamer *Albatross* in 1902, but overlooked when the collection of octocorals was originally studied, is now described and illustrated by scanning electron micrographs. The species differs from all others by the elaborate ornamentation of the sclerites of the polyps and the high, thin crests of the coenenchymal scales.

During a review of gorgonacean corals of the genus *Narella* from Hawaiian waters in connection with the identification of specimens recently collected from guyots south of Hawaii, a fragmentary specimen obtained by the U.S. Bureau of Fisheries steamer *Albatross* during its Hawaiian cruise of 1901–1902 was found among the unstudied specimens in the Department of Invertebrate Zoology, U.S. National Museum of Natural History. The bulk of the collection of octocorals obtained around the Hawaiian Islands by the *Albatross* during its cruise of 1901 and 1902 were reported upon by Prof. C. C. Nutting of the State University of Iowa (Nutting 1908), but neither the present fragment nor the complete specimen from which it must have come were mentioned by Nutting in his report. It can be referred without question to the genus *Narella* but its highly distinctive characters exclude it from any species of that genus heretofore described.

Even though the specimen is only a fragment (fig. 1a) from a terminal branch of what must have been a much larger colony, it retains all diagnostic characters necessary for the establishment of a new species. The only feature that remains unknown is the form and branching pattern of the complete

colony, a character that may be influenced by environmental factors and is not essential for recognition of the species.

Primnoidae
Genus *Narella* Gray, 1870

Narella Gray, 1870:49.—Deichmann, 1936: 168.

Stachyodes Studer [& Wright], 1887:49.—Wright & Studer, 1889:xlvii, 53.—Kükenthal, 1924:308 (references).

Four species of Primnoidae referred to the genus *Stachyodes* (a junior synonym of *Narella*) were reported from waters around Hawaii by Nutting (1908): *Stachyodes angularis* Nutting, 1908; *S. regularis* “Wright & Studer, 1889”; *S. bowersi* Nutting, 1908; and *S. dichotoma* Versluys, 1906.

The specimens described as the new species *Stachyodes angularis* by Nutting (1908) can be referred to the genus *Calyptrophora* Gray. The specimen Nutting reported as *S. regularis* (erroneously attributed to Wright & Studer) is an incomplete terminal branch of *Narella dichotoma* (Versluys, 1906), and the specimens reported as *Stachyodes dichotoma* represent an entirely different new species of *Narella*, which will be described

elsewhere. *Stachyodes bowersi* remains a valid species now referred to *Narella*.

The specimen here described cannot be referred to any species of *Stachyodes* (= *Narella*) previously reported from Hawaiian waters, to any species from Indonesian waters obtained by the *Siboga* Expedition described by Versluys (1906), nor to any species from Japan described by Kinoshita (1907, 1908).

Narella ornata, new species

Figs. 1-3

Material examined.—Hawaii, Kauai: Hanamaulu warehouse S43°W, 8.1 miles, 550-409 fathoms (=1007-748 m), bottom temperature 37.8°F, USFC str. *Albatross* sta. 4019, 21 Jun 1902. One small piece of branch with comatulid crinoid attached. Holotype, USNM 94617 (SEM 2352-2354).

Diagnosis.—*Narella* with both buccal and basal scales distinctly separated adaxially; one pair of small adaxial buccal scales; adaxial opercular scales not remarkably smaller than outer laterals; outer surface of opercular and body scales with radial sculpture developed as prominent, thin crests; cortical sclerites elongate, narrow plates and irregular rods, many with high, thin crests.

Description.—The type specimen (Fig. 1a) is fragmentary so colonial form and manner of branching are unknown. The polyps (Fig. 2) are 3 mm long measured parallel with the branch, directed downward and arranged in whorls of three or four; 7-8 whorls occur in 3 cm of branch length. Members of basal (Fig. 1h) and buccal (Fig. 1g) scale pairs do not meet to form closed but unfused rings around the body of the polyp; medial (Fig. 1f) and buccal (Fig. 1g) scales similar in size; the closed opercular scales form a broad cone (Fig. 3, top) that projects beyond the margin of the buccal pair (Fig. 2, top); one pair of large, squarish adaxial buccal scales is present between the adaxial ends of the buccal scales and below the adaxial opercular scales

(Fig. 3, bottom). Tentacles with scattered, minute, elongate scales.

The radial external sculpture (Fig. 1b) of the opercular (Fig. 1d) and body scales (Fig. 1f-h) is conspicuously developed as thin crests, giving the polyps an unusually ornate appearance. The inner surface of the body scales is covered with crowded, complex tubercles (Fig. 1c). The opercular scales (Fig. 1d) are of the usual triangular shape, with a strong, thin, apical keel on the inner surface, and are sculptured externally by a system of thin crests radiating from center of calcification (i.e., the "nucleus"); the adaxial opercular scales are somewhat smaller than the abaxial and lateral scales but are not unusually reduced in size. The sclerites of the cortex (Fig. 1e) are elongate scales and narrow, irregular rods, most having the outer surface ornamented with one or several prominent crests; the inner surface is covered by small, complex tubercles.

Etymology.—Latin *ornatus* = decorated, beautiful, in allusion to the ornate sculpturing of the sclerites. Adjective.

Comparisons.—The most conspicuous feature of this species is the elaborate, cristate sculpture of the body scales and coenenchymal sclerites, unlike any species of *Narella* heretofore recorded.

Remarks.—The nature of this sample suggests that it was cut from a larger specimen of gorgonian in order to segregate the attached crinoid. As it is most unlikely that such a small part of a gorgonian branch with commensal crinoid would have been taken by the trawl, it is highly probable that a larger specimen from which it was cut did exist at one time. However, no trace of such specimen can now be found in the collections of the National Museum of Natural History. The collection of octocorals obtained around the Hawaiian Islands by the *Albatross* during its cruise of 1901 and 1902 were entrusted by the Commission of Fisheries to Prof. C. C. Nutting at the State University of Iowa for study and report. Al-

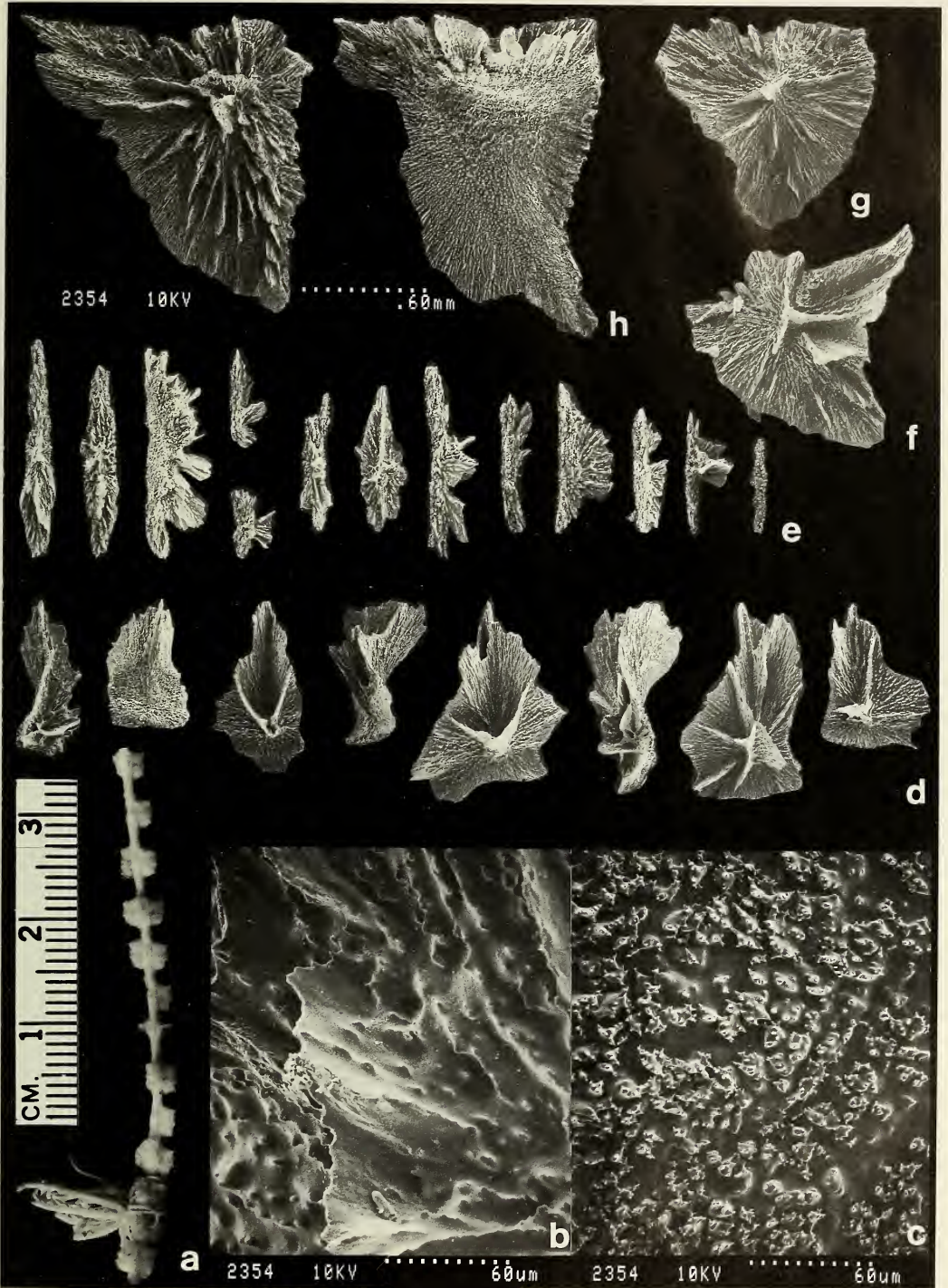


Fig. 1. *Narella ornata* new species. USNM 94617. a, Holotype fragment; b, External sculpture of body scale; c, Internal sculpture of body scale; d, Opercular scales; e, Coenenchymal sclerites; f-h, Body scales. b-h, SEM 2354.

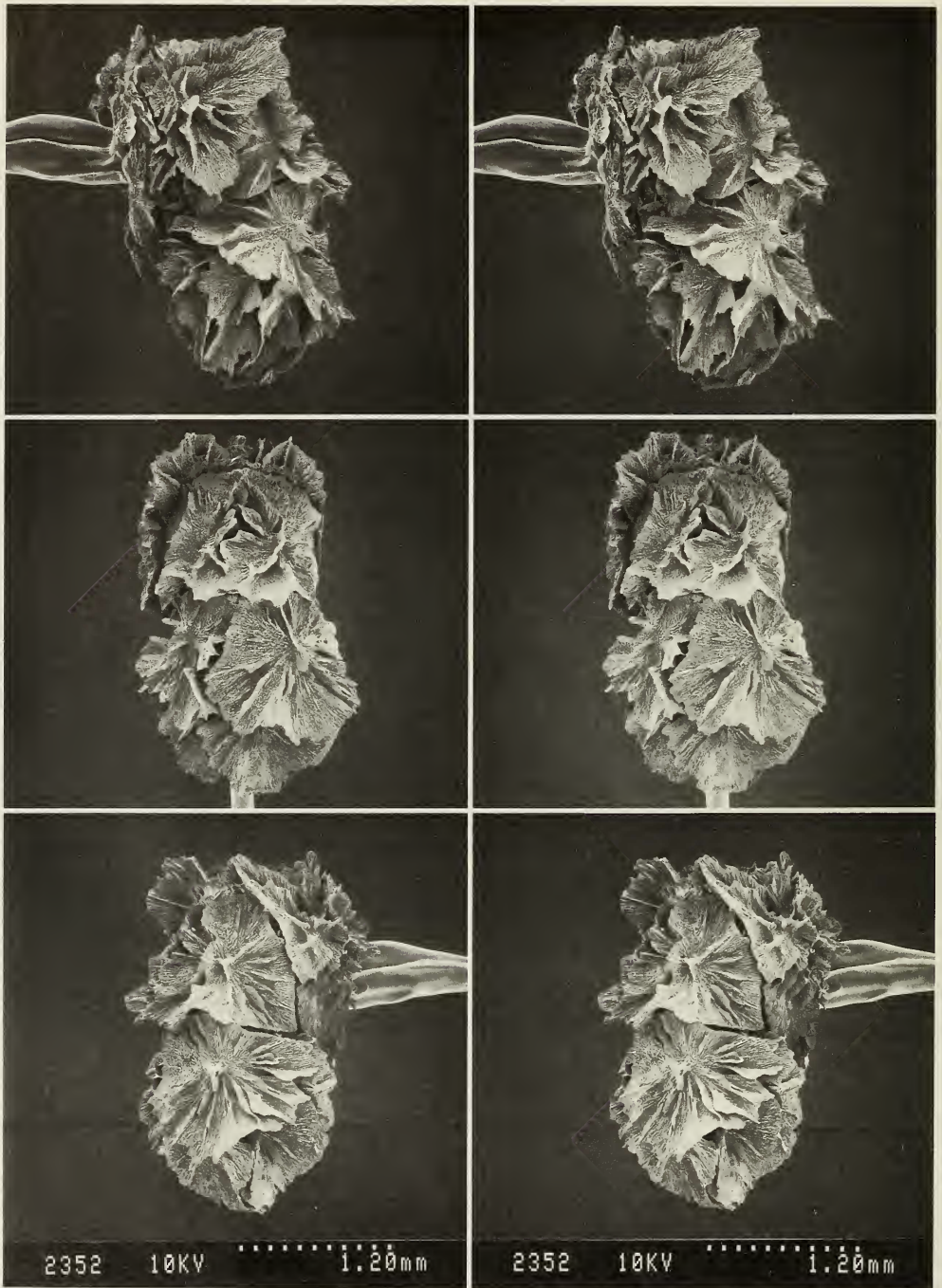


Fig. 2. *Narella ornata* new species. USNM 94617. Isolated polyp in lateral (top), abaxial (middle), and oblique views. SEM 2352, stereo pairs.

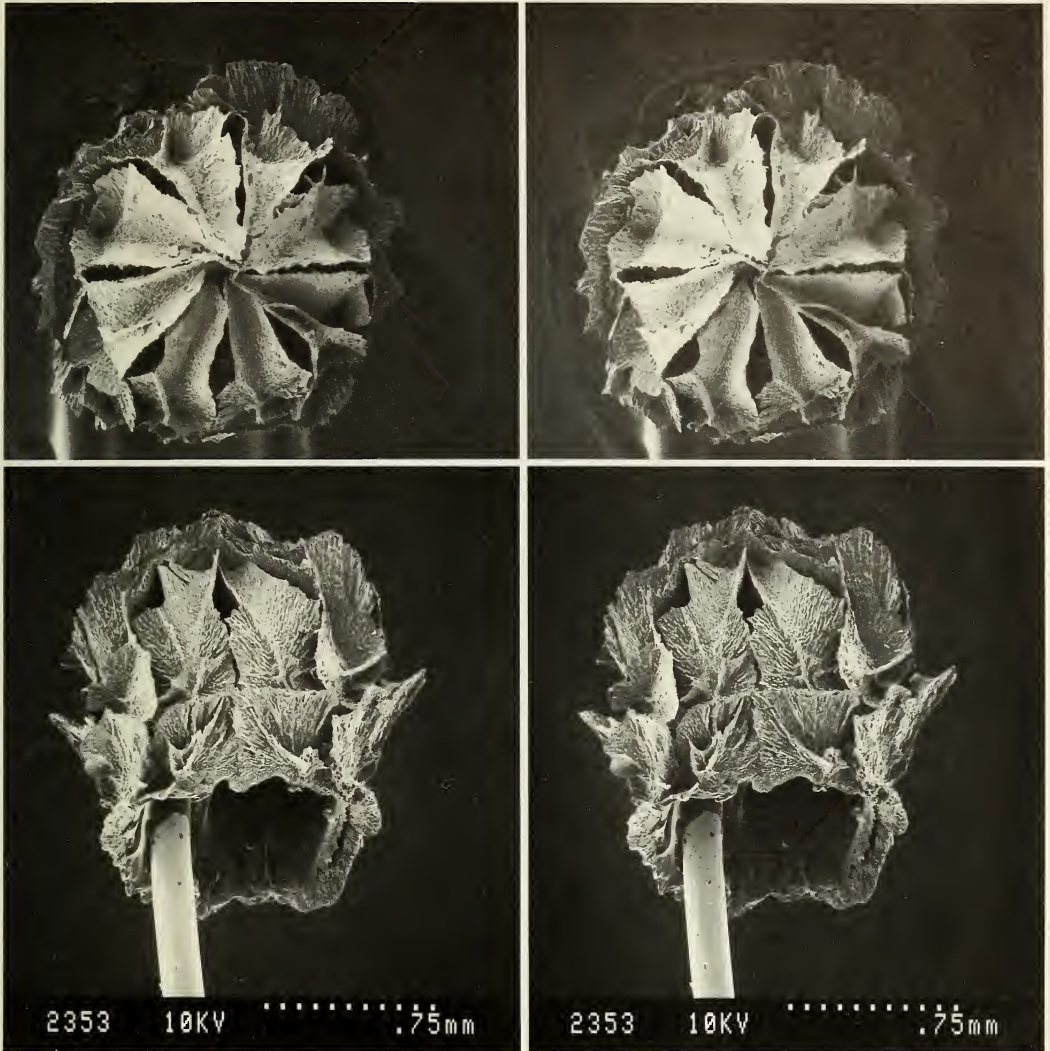


Fig. 3. *Narella ornata* new species. USNM 94617. Buccal portion of polyp showing closed operculum in oral aspect (top) and from the adaxial side (bottom). SEM 2353, stereo pairs.

though type specimens and a selection of other material were sent to the U.S. National Museum by Prof. Nutting in 1907 after completion of his investigations, he retained a substantial number of specimens at the State University of Iowa as was his prerogative as collaborating specialist. The specimens still remaining at the University were transferred to the National Museum of Natural History in 1990, but nothing corresponding to the missing gorgonian is included in that material.

As the taxonomic characters of the remnant still extant are so conspicuously unlike those of any species of *Narella* now known, it can be established as a new species on those characters alone, without knowledge of the overall colonial morphology.

Acknowledgments

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